

217/782-2113

CONSTRUCTION PERMIT - NESHAP SOURCE
NOTICE OF MACT APPROVAL

PERMITTEE

VIOBIN USA, Division of McShares, Inc.
Attn: Carl Snider
Post Office Box 1460
Salina, KS 67401-1460

Application No.: 01100086

I.D. No.: 147035AAH

Applicant's Designation:

Date Received: October 25, 2001

Subject: Continuous Flow Extractor

Date Issued: February 11, 2002

Location: 226 Livingston, Monticello

Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission source(s) and/or air pollution control equipment consisting of a continuous flow extractor and ancillary equipment as described in the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

In conjunction with this permit, approval is given with respect to the regulations governing Constructed or Reconstructed Major Sources of Hazardous Air Pollutants (Section 112(g) of the Clean Air Act) for the above referenced equipment as described in the application, in that the Illinois Environmental Protection Agency (Illinois EPA) finds that the application fulfills all applicable requirements of 40 CFR 63.40-44. This approval is based upon and subject to the findings and conditions which follow:

Findings

1. VIOBIN USA, Division of McShares, Inc. ("VIOBIN") currently operates a batch wheat germ oil extractor that uses hexane as the extraction solvent. VIOBIN plans to expand its oil extraction facility. The expansion involves construction of a continuous flow extractor that will have the capability of extracting oil from wheat germ and other oil containing commodities using hexane or other appropriate solvent. The extractor is equipped with a mineral oil scrubbing system for solvent recovery and a dust collector for the control of particulate matter (PM).
2. The area in which the project is to be located is designated as attainment for all pollutants.
3. The majority of the hexane used as the extraction solvent would be present in the form of normal hexane or n-hexane. The proposed project has potential emissions that are more than 10 tons/year for n-hexane, which is classified as a hazardous air pollutant (HAP), as defined in Section 112(b) of the Clean Air Act. The USEPA has adopted rules establishing Maximum Achievable Control Technology (MACT) for emissions

of HAP for extraction of oil from corn, soybeans and other common oil seeds but these rules do not address the processing of wheat germ. Therefore, the project is subject to a source specific determination of MACT, pursuant to 40 CFR 63.40-44: Constructed and Reconstructed Major Sources of Hazardous Air Pollutants.

4. After reviewing all materials submitted by VIOBIN, the Illinois EPA has determined that the project will use work practices and control equipment that will comply with all applicable Board emissions standards and is proposing to use MACT.
5. A copy of the application, the Illinois EPA's review of the application, and a draft of this permit were forwarded to a location in the vicinity of the plant. The public was given notice and opportunity to examine this material, to submit comments, and to request and participate in a public hearing on this matter.

The Illinois EPA is issuing approval subject to the following conditions and consistent with the specifications and data included in the application. Any departure from the conditions of this approval or terms expressed in the application would need to receive prior written authorization from the Illinois EPA.

Conditions

1.0 Unit Specific Conditions

- 1.1 Unit: Continuous Flow Extractor
Control: Mineral Oil Scrubbing System and Dust Collector

1.1.1 Description

The source is adding a continuous flow extractor that will extract oil from wheat germ and other oil containing commodities using hexane or other appropriate organic solvent. The extractor is controlled by a mineral oil scrubbing system. The amount of hexane emitted is determined by balance calculating the amount of hexane used from the amount received and changes in the amount stored.

The extraction process consists of "washing" the oil from the wheat germ flakes with solvent in a countercurrent extractor. The solvent is evaporated or desolventized from both the solvent oil mixture (miscella) and the solvent-laden, defatted flakes. The oil is desolventized by exposing the solvent/oil mixture to both contact and non-contact steam. Then the solvent is condensed, separated from the steam condensate and reused. Residual solvent not condensed is removed with a mineral oil scrubber. The desolventized oil is stored for further processing or Loadout.

The flakes leaving the extractor, which contain solvent, will be desolventized through the desolventizer toaster where both contact and non-contact steam are used to evaporate the solvent. The toasted flakes then pass to a dryer, where excess moisture is removed by heat and then to a cooler where ambient air is used to reduce the temperature of the flakes.

The particulate emissions that occur in the drier and cooling decks will be captured and exhausted to a dust collector, which will recover product and reduce emissions.

1.1.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Description	Emission Control Equipment
Extractor	Continuous Flow Extractor and Ancillary Equipment	Mineral Oil Scrubbing System (A1) and Dust Collector

1.1.3 Applicability Provisions and Applicable Regulations

- a. The "affected extractor" for the purpose of these unit-specific conditions, is the continuous flow extraction system as described in Conditions 1.1.1 and 1.1.2.
- b. The affected extractor is subject to a National Emission Standard for Hazardous Air Pollutants (NESHAP) for Solvent Extraction for Vegetable Oil Production, 40 CFR 63 Subparts A and GGGG if it processes corn germ, soybeans or other oil seed addressed by these standards. The Permittee must comply with all applicable requirements of Subparts A and GGGG.
- c. The affected extractor is subject to 35 IAC 212.321(a), which provides that the Permittee shall not cause or allow the emission of particulate matter into the atmosphere in any one hour period from any new process emission unit, either alone or in combination with the emission of particulate matter from all other similar process emission units for which construction or modification commenced on or after April 14, 1972, at a source or premises, exceeds the allowable emission rates specified in subsection (c) of 35 IAC 212.321 [35 IAC 212.321(a)].

1.1.4 Non-Applicability of Regulations of Concern

- a. The source has addressed the applicability and compliance of 40 CFR 52.21, Prevention of Significant Deterioration (PSD). The limits established by this permit are intended to ensure that the modification addressed in this construction permit does not constitute a major modification pursuant to these rules.
- b. The existing batch extraction operation continues to not be subject to 40 CFR 63, Subpart GGGG.
- c. This permit is issued based on the affected extractor not being subject to 35 IAC 215 Subpart K, Use of Organic Material, because hexane is not a photochemically reactive material.

1.1.5 Operational Limits

- a. The affected extractor shall be operated to comply with the standards and compliance requirements specified at 40 CFR 63.2840 and 63.2850, respectively, whenever the extraction solvent being used contains n-hexane or other HAP, even if processing an oil seed that is not addressed by Table 1 of 40 CFR 63.2840.
 - i. In particular, for the affected extractor, the compliance ratio, as set forth in 40 CFR 63.2840, shall be less than or equal to 1.00.
 - ii. When processing wheat germ and other oilseeds for which a solvent loss factor is not set by Table 1 of 40 CFR 63.2840, the oilseed solvent loss factor value shall be 0.9 gallons of HAP lost per ton of wheat germ or seed processed, except as provided in Condition 1.1.5(a)(iii).
 - iii. The Permittee is authorized to process commodities, which are not addressed by Table 1 of 40 CFR 63.2840, with an oilseed solvent loss factor value greater than 0.9 gallons of HAP lost per ton of seed processed for a period of 180 days (cumulative run time) under this construction permit. If the calculated oilseed solvent loss factor is greater than 0.9 gallons/ton, then the Permittee must apply for a revised MACT determination.

Note: This Condition represents the Maximum Achievable Control Technology (MACT) for emissions of hazardous air pollutants (HAP) as applied to this project, pursuant to 40 CFR 63.42(c).

- b. i. The affected extractor shall not operate without the mineral oil scrubber or dust collector.
- ii. The Permittee shall follow good operating practices for the mineral oil scrubber, including periodic inspection, routine maintenance and prompt repair of defects.

1.1.6 Emission Limitations

- a. VOM and HAP emissions from the affected extractor shall not exceed 77.1 tons/year. Compliance with these emission limits shall be determined from the amount of organic solvent used in the affected extractor, based on inventory records, compiled on a monthly basis with the annual compliance determination made from the sum of the data for the current month plus the preceding 11 months (running 12 month total).
- b. Emissions of PM from the affected extractor (which occurs at the dryer cooler which is controlled by the dust collector) shall not exceed 0.77 lb/hour and 3.40 tons/yr.

1.1.7 Testing Requirements

Upon a reasonable request by the Illinois EPA, emission testing for PM from the affected extractor shall be performed.

1.1.8 Monitoring Requirements

The Permittee shall monitor the following information for the mineral oil scrubber:

- a. Pressure drop across the scrubber (inches of water);
- b. Inlet gas temperature (Degrees F);
- c. Inlet gas flow rate (scfm); and
- d. Scrubbant rate (gallons/minute).

1.1.9 Recordkeeping Requirements

- a. The Permittee shall maintain records of the following items for the affected extractor:
 - i. The Permittee shall keep records of the monitoring activity conducted pursuant to Condition 1.1.8.

- ii. Operating records for the affected extractor:
 - A. Commodity(s) processed and rate (tons of commodity processed);
 - B. Amount of extraction solvent used from inventory records (tons/month and tons/year);
 - C. HAP content of extraction solvent with supporting documentation;
 - D. Operating hours (hours/month); and
 - E. Maintain an operating and maintenance log for the scrubber and the dust collector.
- iii. The Permittee shall measure and record the pressure drop of the dust collector on at least a weekly basis.
- iv. Emission records for the affected extractor:
 - A. VOM/HAP emissions (tons/month and tons/year);
 - B. Monthly HAP Compliance ratio, with supporting calculations; and
 - C. Observations of opacity made using USEPA Method 9 by the Permittee's personnel or by qualified observers on its behalf (percent).
- b. The Permittee shall comply with the recordkeeping requirements specified at 40 CFR 63.2860, whenever the extraction solvent being used contains n-hexane or other HAP.
- c.
 - i. Pursuant to 40 CFR 63.2863, the records must be in a form suitable and readily available for review in accordance with §63.10(b)(1).
 - ii. As specified in 40 CFR 63.10(b)(1), the Permittee shall keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.
 - iii. The Permittee shall keep each record on-site for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, in accordance with 40 CFR 63.10(b)(1). The

Permittee may keep the records off-site for the remaining 3 years.

1.1.10 Reporting Requirements

- a. The Permittee shall notify the Illinois EPA of noncompliance of the affected extractor with the permit requirements as follows. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:
- b. The Permittee shall comply with the reporting and notification requirements specified at 40 CFR 63.2860, whenever the extraction solvent being used contains n-hexane or other HAP.
- c. Two copies of reports and notifications required by this permit shall be sent to:

Illinois Environmental Protection Agency
Division of Air Pollution Control
Compliance Section (#40)
P.O. Box 19276
Springfield, Illinois 62794-9276

and one copy shall be sent to the Illinois EPA's regional office at the following address unless otherwise indicated:

Illinois Environmental Protection Agency
Division of Air Pollution Control
2009 Mall Street
Collinsville, Illinois 62234

1.1.11 Operational Flexibility/Anticipated Operating Scenarios

The Permittee is authorized to make the following physical or operational change with respect to the affected extractor without prior notification to the Illinois EPA or revision of this permit. This condition does not affect the Permittee's obligation to properly obtain a construction permit in a timely manner for any activity constituting construction or modification of the source, as defined in 35 IAC 201.102:

Change in the extraction solvent used or commodity processed.

1.1.12 Compliance Procedures

Compliance with the emission limits in Condition 1.1.6(a) shall be based on the recordkeeping requirements in Condition 1.1.9 and a material balance calculation.

2. The affected extractor shall not begin operation until construction, including construction of air pollution control equipment, is complete, and reasonable measures short of actual operation have been taken to verify proper operation.
3. Operation of the equipment being constructed is allowed under this permit until final action is taken on the Clean Air Act Permit Program (CAAPP) application for this source, as a CAAPP application for the source has been received and been deemed complete by the Illinois EPA. As a result, the Permittee is not required to apply for and obtain a state operating permit for the affected extractor.

Please note that the Permittee shall update its CAAPP application to include this new equipment by submitting form 505-CAAPP - "Supplement to CAAPP Application" along with all other appropriate information to address the affected extractor.

If you have any questions on this permit, please call Jason Schnepf at 217/782-2113.

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution Control

DES:JMS:psj

cc: Region 3